SIEMENS

Network ID Camera

Installation and Startup

NIC2-1

English

Installation and Setup Manual

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NIC2-1
Network ID Camera

Table of Contents

1   General

This manual describes how to install and setup the Network ID Camera herein called NIC. This includes anything from installation to setting-up what the picture printed on the film should look like, which language for the display, to how it should communicate with a booking system.

This manual is written for software version 2.2 and it is assumed that language is set to English. Note that you may select language to English which causes all texts to be displayed in English, but still select country to the country you are in to get country-dependent information, like date format and PID number, correct.

2   Installation

2.1   Unpacking

Check that the cardboard box is undamaged and has no holes or deep scratches. Any damage must be reported to the transport company or the supplier whenever it can be suspected that the camera has been damaged during transport.

The box contains the camera, an operator's manual in local language and the power cord. The keyboard should be equipped with the country dependent keycaps.

2.2   Installation Details

After unpacking the camera it should be placed on a steady table or shelf. If the camera is operated in mobile units like mammography screening buses, or where there is a risk of the camera falling down, it should be fastened to the surface with two screws mounted from the inside of the camera through two holes in the bottom plate with suitable screws.

The power cord should be connected to the power receptacle on the backside of the camera and to wall outlet.

No voltage selection is necessary, the camera can be operated at any voltage from 95 VAC to 250 VAC 50/60Hz.

Power receptacle
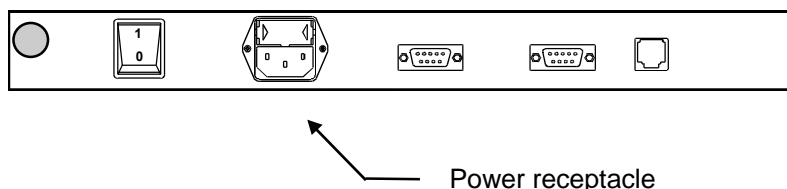
Check with customer that the keyboard has the local used keycaps.

Country keycap sets can be ordered as spare parts if needed.

Warning

The Network ID Camera is classified as a Medical Device and fulfils EN 60950.

According to European Safety Regulations for Medical Equipments, the following conditions must be fulfiled:
- if the camera is operated within a distance of 1.5 m from the patient, it must be connected to the equipotential equalization device (E^2D).
  E^2D with cable must be provided by the customer.
  The purpose of the E^2D is to ensure that all medical and other equipments are connected to the same ground potential.
- if the camera is connected to a Medical Equipment according to EN 60601-1(e.g. safety ground or data connections) the safety standard EN 60601-1-1 has to be met and documented.
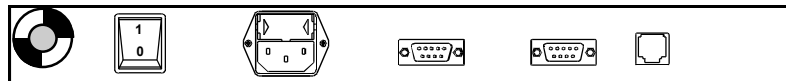
E^2D plug - Connector for the cable coming from the equipotential bushbar.

3   Setup

This section describes how the set-up of the camera is done. It assumes that the operator is familiar with the camera.

3.1   Getting into setup mode.

Make sure the camera displays the main window which is the window that comes up after the initial screen with the Triacon logo. The window shows:

```
Date: 031199                    Time:15:45:48


       Selected cassette  : Standard, C1


Manual        Booking      Memory      Cass type
```

To get into setup mode, press Shift F4 (the right soft-key while holding any of the two shift keys down). A new window will appear asking for a password.

The Network ID Camera will remember the password for about 15 minutes and will not ask you for the password again, if you exit and then enter set-up mode again within 15 minutes. This is to eliminate the need to re-type the password every time you leave setup mode to test a configuration.

3.2   Resetting to factory default

Get into configuration mode as described in chapter 3.1. Then press Ctrl-E. This will reset the memory of the Network ID Camera and restart the camera just as if you were switching the power on again. Go to chapter "Settings" to find out how to change the language of your preference.

3.3   Main configuration window

Get into configuration mode as described in chapter 3.1.

```
Setup                           Ver: 2.2
Picture settings
Bookinglist configuration
Communication param
Settings
Sensor adjustment
Lock         Up         Down       Exit
```

This is a menu from where to select what has to be set-up. Some of the selections will present you yet another selection menu (first selection for example) while other selections will present a window

where configurations can be changed (settings for example).

The soft-keys are used as follows:

Lock   Lock the set-up with a password. Will make the Network ID Camera ask
            for password the next time set-up is entered. An alternative to LOCK is to
            wait for the password time-out.

Up   An alternative to using the up-arrow. Will move to the selection above the
            current.

Down   An alternative to using the down-arrow. Will move to the selection below
            the current.

Exit   Exit set-up mode.

Picture and settings
            Here you can set details of how and what will be printed on the film.

Bookinglist configuration
            Here all settings for manual entry of data to bookinglist is configured.

Communication param
            Here all settings regarding the communication between the Network ID
            Camera and the equipment connected to any of the four communication
            ports can be changed.

Settings   Here all settings of a more general nature can be changed, e.g. which
            language the Network ID Camera speaks.

Sensor adjustment
            This selection will show a picture showing the status of the three cassette
            sensors. For detailed information, please refer to the Service manual.

Test functions
            Here parameters regarding the opening of the cassette window can be
            set. For detailed information, please refer to the Service Manual.
            NOTE: This should only be done by trained service personnel.

Serial analyzer
            Here all data, received on HOST or NET serial communication port, is
            listed. For detailed information, please refer to the Network Installation
            Manual.

Remote control
            Here the down-/upload of a set-up is performed.

System logger
            Here is listed errors and abnormal situations. For detailed information,
            please refer to the Service Manual.

3.4   Pictures and settings

Choosing this selection will present five new alternatives.

```
Picture settings
Picture          Standard, C1
Settings         Standard, C1
Picture          Min-R2,   C1N
Settings         Min-R2,   C1N
Menus
            Previous     Next        Exit
```

Here the layout of the picture printed on the film is defined. Two different pictures can be defined, "Standard, C1" and "Min-R2, C1N". The C1N window is narrower than the C1 window (6 lines instead of 8 if the small font is used), but this is not reflected by the configuration alternatives, instead it is the responsibility of the person creating the setup not to put anything information outside the window.

This means that it is possible to have two different configurations for a C1 window, one under the `Picture Standard, C1` and another under `Picture Min-R2, C1N`. The picture names are editable and can be given any name corresponding to their use.

3.4.1 Some frequently used words

`Field`   This is what a unit of information is called when it is displayed on the picture. A field contains, for example, the name of a patient or the current date or current time. A picture is made of a number of fields, and each field can be placed anywhere within the picture. A field also contains information about how the information should appear on the picture, for example the size of the text.

`Pixel`   A pixel is a small dot of which all characters are built on the display. Position on the display is given in pixels. To be able to calculate how much information will fit into the window, you must know the following.

The C1 window is 64 pixels high (0 to 63) and 240 pixels wide (0 to 239).

The C1N window is 48 pixels high (16-63) and 240 pixels wide (0 to 239).

A character is 16 pixels high and 12 pixels wide, if the large font is used.

A character is 8 pixels high and 6 pixels wide, if the small font is used.

`Font`   The appearance of the text on the film/display is determined by the font selected. Currently two fonts are available, the LARGE and the SMALL font. The large font is twice as high and wide as the small font.

3.4.2 Picture Standard, C1/Min-R2, C1N

If Picture Standard, C1 is selected, the following will be displayed (factory default):

```
No   Field    Length    Row,Col
01:  PID         12       0,  0
02:  Date         6       0,168
03:  Name        20      16,  0
04:  AP/PA        2      32,  0
05:  Text        35      32, 30
Place       New         Remove      Exit
```

This display shows all fields that are defined for this picture. The up and down keys can be used to step through all fields. The window will automatically scroll to display more items.

To add a new item, place the cursor on the position where you like to add a field and press the NEW soft-key. This will make the Network ID Camera duplicate the field at the cursor and you can then edit one of the copies as you wish. The maximum numbers of fields are 50 for each window, C1/C1N.

To remove an item, place the cursor on the field you wish to delete, and press the REMOVE soft-key. This will immediately remove the selected item.

To move a field (i.e. give it another position on the picture printed on the film) press the PLACE soft-key. This will bring up another window where the selected field is displayed as a white box representing the size of the field, and all other fields are displayed as other strings of characters selected to represent the type of the field (D for date field N for name field). The current field can now be moved by the four arrow keys. If shift+arrow key is pressed the field will step 6 pixels left/right and 8 pixels up/down. When a good position is found just press the *enter* key to leave the window. Experience has shown that this is a good method of finding out where to place the field. It is, however, difficult to find the exact position, as the fields are often placed one or two pixels off. Therefore, the optimal procedure is to place all fields using this method, and then to check all positions manually and correct them by entering their positions by numbers as described below under "Editing a field".

3.4.2.1 Editing a field

To change a parameter of a field, place the cursor on the field and press the *enter* key. This will open a new window:

```
Fielddefinition                       Field:05
Type: Text                 Length: 35
Row:    32                 Column: 30

                             Font: Small

         Previous    Next          Save
```

Type   tells what kind of information is displayed in this field. The following types are available.

Name – The name of the patient. The user may enter any information. This field must not be empty.

PID – The PID number of the patient. When entering the PID number, only the format that is used in the country for which the camera is configured is allowed. If a check-digit exist it is also checked, and the user is forced to either correct the PID number or explicitly tell that the number is not valid by pressing the Shift-F1 key.

Number – An integer. Allows only numeric characters to entered.

Text – Any text in any format can be entered.

AP/PA – Anterior or Posterior. This tells, whether the X-ray picture is taken with the X-ray tube in front or behind the patient. Apart from displaying it in the film, the information is used by the Network ID Camera to mirror the picture when the picture is taken PA.

Menu – A menu allows the user a selection from a number of predefined text strings. Five different menus can be defined, and each of them can have 16 alternatives. In this window you only have to chose which of the five menus you will use. When you leave the type field (press enter) a new field will appear in the window, called menu. Here the number of the menu to use can be entered.

F-Text – Fixed text. This is used to enter text that will always be displayed like the name of the hospital. When you leave the type field

(press enter) a new field called "Fixed text" will appear at the bottom of the window, allowing you to enter the text to display.

`H-line` – Horizontal line. Will display a horizontal line on the picture. Take care not to put the line behind any other field because these other fields may overwrite the line. When you leave the type field (press enter) a new field called "Width" will appear at the bottom of the window, allowing you to enter the width of the line.

`V-line` – Vertical line. Details see H-line.

`Date` – Print current date. When the type field is left a new entry will appear called format. Here the date format can be selected. If the format you want is not available it can still be created by using three different date fields, one each for year, month, and day with separating characters inserted as F-text fields. Note that months can be displayed either as a two-digit number (MM) or three-letter text (MMM).

`Time` – Prints current time. Functions the same way as the DATE field.

`COMM` – Communication. This field is used if the Network ID Camera is connected to other equipment that sends data to the Network ID Camera, for example an X-ray unit that can send information about kV and mAs. When the type field is left a new entry will appear called Comm. This item will present a list of the type of information available. The type of information highly depends on the kind of equipment connected. Please refer to chapter 3.6.2 and the Network Installation Manual for more information.

`P-text` – Persistent text. Works as a text field but with the difference that the text inserted here will remain unchanged until it is edited even if the patient data window is closed and then opened again.

`B-date` – The patient data of birth. Only digits are allowed to be entered. The date format depends on the country setting.

`Special` – This field consist of some special function like calculation of the patient age and to generate special characters. If the AGE function is to be used a B-date field must also be defined. This because the age is calculated from the B-date field and the built-in real time clock.

`Length`	The length of the field.
`Row`	The pixel row where the upper edge of the characters of the field should be displayed. The uppermost row is normally placed at row 0 for the C1 window and row 16 for the C1N window.
`Column`	The pixel column where the left side of the character should be placed.
`Font`	The size of the character. Select between large (h=16, w=12), medium (h=12, w=9) or small (h=8, w=6).
`Menu`	This field only appears when the field type is Menu. Enter the number of the menu to be used. Please refer to chapter 3.4.4.MENUES for information on how to define menus.
`F-text`	Fixed text. This field only appears when the field type is F-text. Enter the text to be displayed. The maximum numbers of F-texts are 30 divided among the C1-/C1N windows.
`Format`	This field only appears when the field type is date or time. See Date above for more information.

Comm   Communication item. This field presents a list with the information that is
            sent from equipment connected to the Network ID Camera. The kind of
            information highly depends on the kind of equipment connected. Please
            refer to chapter 3.6.2 and Network Installation Manual.

Width   This field only appears when the field type is V-line or H-line. See H-line
            above for more information

Type   This field only appears when the field type is special. See special above
            for more information

3.4.3 Settings Standard, C1/Min-R2, C1N

If Settings Standard, C1 is selected, the following will be displayed:

```
Settings
Status:    Used         Text:      Normal
Exposure:    550 ms      Location: Bottom
Intensity:    1          Vert adjust:        0
Name: Standard, C1       Def proj:          AP

            Previous     Next         Save
```

The cursor is located at "Status" and can be moved between the different settings by
pressing up- and down-arrow keys. If the softkeys Previous and Next are visible it is
two or more predefined values that can be selected by pressing the corresponding
function keys F2 and F3.

The following settings can be performed:

Status   Toggle between Used/Not used (i.e. enable/disable the picture). If one
             picture is switched to "Not used" the other one will automatically be
             switched to "Used". A "Not used" picture can not be accessed by the
             operator. Factory default is Used.

Exposure   Basic exposure time in milliseconds. A value between 10 and 65535
             can be set. A value less than 300 will cause vertical pattern to appear
             because of interference with the refresh rate of the exposure time.
             Factory default is 550.

             The actual exposure time is the basic exposure time set in this window
             multiplied by a factor determined by the exposure correction set in the
             exposure window that is opened from the patient data window. The
             correction factor is:

1	2	3	4	5	6	7	8	9
0,5	0,6	0,71	0,84	1	1,19	1,44	1,68	2

Intensity   Intensity of the exposure display. Selectable values are 0.4, 1, 1.8, 4.5
             and 10. Factory default is 1.

Name   The name of this picture. Can be edited to any name with a maximum
             length of 15 characters. Factory default is "Standard, C1" and "Min-R2,
             C1N".

Text Toggle between Normal/Inverted. Determine whether the picture should show white text on black background or black text on white background. Factory default is Normal.

Location Toggle between Bottom/Top. Determine whether the picture should be printed on bottom or top of the film. Factory default is Bottom.

> **NOTE!** If a window is set-up for a MIN-R2 cassette bottom marking and then is changed to top marking the lower 16 pixel-lines of the image will be placed outside the cassette window. This means that the whole image must be moved 16 pixel-lines up, field by field, to fit the MIN-R2 cassette window. If a Standard C1 cassette is used, no adjustments is needed when swapping from bottom to top marking.

Vert Adj Offset between operator- and exposure display. The picture which will be printed on the film can be adjusted down. Maximum adjustment is 32 pixel-lines. Factory default is 0.

Def proj Setting if AP or PA projection should be default. Even if there is no AP/PA field defined, the picture will be mirrored according to this setting.

3.4.4 Menus

Menus can be defined here. A menu is a type of field where the user can select from a set of predefined texts. Five different menus can be defined. Each of them can have 16 different selections. Any menu can be used any number of times by either the C1, or the C1N window, or both.

When "Menus" is selected from the window described in chapter 3.4 the following window is displayed:

```
No Len Alternative
1:   4   SIN, DX, MIKT
2:
3:
4:
5:
              New len              Exit
```

Here menu 1 is defined. It has a length of 4 and contains the alternatives SIN, DX and MIKT. To create a new menu, move the cursor to a new menu, for example No. 2, and press the *enter* key. A new window will appear asking you for the number of characters of the longest alternative in the list. This may be a number between 1 and 8. After entering an appropriate value the following window appears:

```
No Proj Alternative
01:      "       "
02:      "       "
03:      "       "
04:      "       "
05:      "       "
AP/PA      Previous    Next      Save
```

Now you can enter the text for the alternatives. Keep in mind that the last alternative entered must not be a blank, because the program cannot see the difference between a blank alternative and no alternative at all. Instead it is better to put the blank

alternative at the first place, because the first alternative is selected by default. If an alternative is longer than allowed by the length set, it will simply be cut to the proper length when the *save* key is pressed.

A projection can be set for each alternative. It will change the AP/PA setting to the AP/PA setting set for the menu item. The Proj can be toggled Off/AP/PA by pressing the F1 soft-key.

3.5   Bookinglist configuration

Here the configuration of the internal bookinglist is made. Choosing this selection will present three new alternatives.

```
Bookinglist configuration
Settings
Define input fields
Link field to patient window


           Previous    Next        Exit
```

If a booking- or RIS-system is to be used to download patient data to the booking list it is only one thing to be set here. Under settings "kind of input" must be defined. All other settings regarding the communication protocol and patient data settings are made under section "Communication parameters", please refer to chapter 3.6 'Communication param'.

3.5.1 Settings

```
Settings
Kind of input     HOST
Default sortorder NAME
Erase list at power interrupt    Yes


           Previous    Next        Save
```

The cursor is located at "Kind of input" and can be moved between the different settings by pressing up- and down-arrow keys. With the softkeys Previous and Next the values can be selected by pressing the corresponding function keys F2 and F3.

The following settings can be performed:

Kind of input   Toggle between HOST/MANUAL. Determine whether the data is downloaded from a host system or if it shall be manually inserted. Default setting is HOST.

Default sortorder

              Toggle between NAME/PID. Determine whether the booking list shall be sorted by name or the personal identity number. Default setting is NAME.

```
Erase list at power interrupt
```

> Toggle between Yes/No. If set to Yes the booking list will be erased every time the Network ID Camera is powered down. If set to No the booking list will remain unchanged after a power interrupt. Default setting is Yes.

3.5.2 Define input fields

```
Nr Field    Len  Label
01:PID       11 "PID      "
02:NAME      20 "Name     "
03:TEXT      10 "Misc     "
04:UNUSED    10 "         "
05:UNUSED    10 "         "
        Previous   Next      Save
```

Maximum five entries can be defined. Field types available are; PID, NAME, B-DATE and TEXT, please refer to chapter 3.4.2.1 'Editing a field' for detail information. The maximum number of characters to enter in each field must be set, this is done in the "Len"-column. A label for each field can be defined, here can any name be entered with maximum eight characters.

Ex. The definitions above will look like this for the operator while in "Manual data entry to booking list".

```
Bookinglist        200 free           220500
PID:_
Name:
Misc:


Exit                              Save
```

3.5.3 Link field to patient window

This window is used to set-up a translation table between a TEXT-field defined under 'Define input fields' and the field number in the C1 and C1N window of the Network ID Camera.

```
Src  C1    C1N
00:   0      0
01:   0      0
02:   0      0
03:   5      0
04:   0      0
            C1        C1N       Save
```

Use C1 and C1N keys to change between C1 and C1N columns.

Ex. The TEXT-field defined in chapter 3.5.2 'Define input fields' shall be linked to field no. 5 in chapter 3.4.2 'Picture Standard, C1/Min-R2, C1N'. We need to enter the number five in column C1, row 3, see picture above.

3.6   Communication param

Selecting this item will present a window where the communication channels of the Network ID Camera can be configured. This window works slightly different from the previous windows: instead of presenting a sub-menu where the item to configure is selected, function keys are used to change what has to be configured. This scheme seemed better suited in this situation where the user often quickly wants to switch between channels. Apart from that, there is a protocol-dependent configuration window for each channel, which is opened from each channel configuration window by a function key. When the Communication parameters window is open the channel selected is displayed in the upper right corner of the window. To select another channel, press the Channel (F1) soft-key. To configure a parameter of the selected protocol press the Shift Protocol (Shift-F1) soft-key. Note that not all protocols have a protocol set-up associated.

This chapter does not cover all details of the Network ID Camera communication. For more information please refer to the Network Installation Manual.

3.6.1 Communication parameters Channel: HOST

In this window the communication channel used to download patient data from a host computer is configured.

NOTE! If the text "Manual bookinglist is enabled" is visible the data input is expected to be manually. To change this setting please refer to chapter 3.5.1 'Settings'.

```
Communication parameters Channel: HOST
Speed          9600
Parity         NONE   Groupname
Databits       8 bits Protocol    2=DIRECT
Connection     RS-232 Char.tbl     AUTO
         Manual bookinglist is enabled
Channel     Previous     Next        Save
```

Move between the different settings by pressing up- and down arrow keys. Use the Previous (F2) and Next (F3) keys to toggle between the alternatives.

Speed   Set the speed of the channel, 300, 600, 1200, 2400, 4800, 9600, 19200 or 38400. Factory default is 9600.

Parity   Set the parity used by the channel, NONE, EVEN or ODD. Factory default is NONE.

Databits   Set the number of bits used by the channel, 7 or 8 bits. Factory default is 8 bits.

Connection   Selects where the host computer is connected. RS-232 means that the host computer is connected to the 9pin DB connector labelled HOST, RS-422 means that the host channel of the RJ-45 connector should be used. Factory default is RS-232.

Groupname   Sometimes several cameras are connected in parallel which means that all cameras will receive patent data for all patients. Setting groupname will give the camera a name, so that the camera will only received data addressed to this name. For more information, please read the Network Installation Manual.

Protocol   Here the protocol is selected. The following alternative are available:

0=2010B – Kodak 2010 compatible protocol with STX/ETX as if connected to the 2010 communication box. B means connected to BOX.

1=2010D – Kodak 2010 compatible protocol without STX/ETX as if connected to a host computer instead of the 2010 network. D means Direct to host without box.

2=DIRECT – Network ID Camera direct protocol.

3=DOWNLOAD – Network ID Camera download protocol.

For more information, please read Network Installation Manual.

Char.tbl   Only active for the Nordic countries.
Select which character table to use. A UNIX computer or a PC running MS-DOS or Windows use different coding for national characters like the Swedish ÅÄÖ for example.

AUTO – Fortunately, there are mostly no conflicts between the codes used in the different character sets, which means that the Network ID Camera can apply the translation scheme for all character sets at the same time without any conflicts. This is AUTO.

7bit – In some cases the characters []{}\| are used for national characters. The 7bit setting will translate these characters. The translation depends on the country setting.

IBM – This is the PC/MS-DOS codepage 850 character set.

WIN – This is the MS-WINDOWS character set.

3.6.1.1 Protocol set-up

Select Protocol (Shift-F1) when DIRECT- or DOWNLOAD protocol is selected. This will bring up the protocol set-up for the protocol.

This window is used to set-up a translation table between a field number used in the communication protocol and the field number in the C1 and C1N window of the Network ID Camera. Use the up and down arrows to move to the field above and below and use the C1 and C1N key to change between the C1 and C1N columns. Note that 15 fields are available. They appear by pressing the down arrow when you are at the bottom line. For more detailed description please refer to the Network Installation Manual.

```
Host C1   C1N
00:    0     0
01:    0     0
02:    0     0
03:    0     0
04:    0     0
              C1           C1N        Save
```

3.6.2 Communication parameters Channel: AUX

In this window the auxiliary communication channel is configured. This channel is used for different purposes.

```
Communication parameters Channel: AUX
Speed           9600
Parity          NONE
Databits        8 bits Protocol     NONE
Connection      RS-232

Channel      Previous     Next        Save
```

Move between the different settings by pressing up- and down arrow keys. Use the Previous (F2) and Next (F3) keys to toggle between the alternatives.

Speed   Set the speed of the channel, 300, 600, 1200, 2400, 4800, 9600, 19200 or 38400. Factory default is 9600.

Parity   Set the parity used by the channel, NONE, EVEN or ODD. Factory default is NONE.

Databits   Set the number of bits used by the channel, 7 or 8 bits. Factory default is 8 bits.

Protocol   Here the protocol is selected. Available alternatives are:

NONE – The channel is not used.

MMAT3000 – Selects the protocol used by the Siemens Mammomat® 3000 for sending exposure data.

SENOGRAP – Selects the protocol used by the Senograph for sending exposure data.

GXDP-P – Selects the General XRAY Data Protocol with poll function for sending exposure data.

GXDP-NP – Selects the General XRAY Data Protocol without poll function for sending exposure data.

MMAT300 – Selects the protocol used by the Siemens Mammomat® 300 for sending exposure data.

PLANMED – Selects the protocol used by the Planmed Sophie for sending exposure data.

For more information, please read the Network Installation Manual.

3.6.2.1 Protocol set-up SIEMENS Mammomat® 3000

Pressing Shift Protocol (Shift F1) when the MMAT3000 protocol is selected will bring up the protocol set-up for the SIEMENS Mammomat® 3000 protocol.

```
Define text for Mammomat 3000
Focus       SF          LF
Anode       W           Mo
Filter      Rh          Mo
Grid        Grid        No grid

            0 Text      1 Text      Save
```

This window is used to define a number of text strings. The Mammomat® 3000 sends a few parameters as 0 and 1, whereas they should be presented as texts instead. This window is used to define those texts. For more detailed information, please refer to the Mammomat® 3000 manual.

Each string may be up to 8 characters long. Use the up and down arrows to go to the row below or above, and use "0 text"- and "1 Text" soft-keys to select column.

Creating the picture that will be printed on the film is done in the same way as usual selecting the COMM field type. **NOTE!** The communication protocol has to be set before setting up the picture, otherwise the COMM field will display NONE.

Example

We want to create a COMM field that shall display the FOCUS. Create a new field and under fielddefinition select Type COMM. The Mammomat® 3000 is sending ether 0 or 1 as the FOCUS parameter and the Network ID Camera is translating it to a text according to the protocol set-up above. In this case the texts are SF for 0 and LF for 1. With reference to this settings, the length should be set to 2 and Comm to FOCUS. This means that we have to define the length of this COMM field to two. Select Comm FOCUS will link the focus data to this field.

```
Fielddefinition
Type:  COMM        Length: 2
Row:    56         Column: 108

Comm: FOCUS          Font: Small

            Previous    Next      Save
```

The field data do not include the unit (kV, mAs etc.). To add that, an F-text field with the appropriate text has to be inserted after the COMM field. Create a new field and under fielddefinition select Type F-text. Enter values for the row and column to place this field at a position of your preference. Hint, use the Place function to position fields, see chapter 3.4.2 'Picture Standard, C1/Min-R2, C1N'. Enter appropriate text under Fixed text.

```
Fielddefinition
Type:  F-text
Row:    56         Column: 78

Fixed text:         Font: Small
Focus
            Previous    Next      Save
```

These fielddefinitions will give us the text "Focus" followed by the "FOCUS"-value at the center bottom of the patient data window.

3.6.2.2 Protocol set-up GE Medical System Senographe

Select Protocol (Shift-F1) when the SENOGRAP protocol is selected. This will bring up the protocol set-up for the GE Medical System Senographe.

```
Define text for GE Senographe
Mode         AOP        AEC          Manual
Sub mode     STD        CTS          DOSE
Focus        SF         LF
Track        RH         MO
Filter       RH         AL           MO
             Left        Right        Save
```

This window is used to define a number of text strings. The GE Medical System Senographe sends a few parameters as 0 and 1, whereas they should be presented as texts instead. This window is used to define those texts. For more detailed information, please refer to the GE Medical System Senographe manual.

Each string may be up to 8 characters long. Use the up and down arrows to go to the row below or above, and use Left- and Right soft-keys to select column.

Creating the picture that will be printed on the film is done in the same way as usual selecting the COMM field type. **NOTE!** The communication protocol has to be set before setting up the picture, otherwise the COMM field will display NONE.

Example

We want to create a COMM field that shall display the MODE. Create a new field and under fielddefinition select Type COMM. The Senographe is sending 0, 1 or 2 as the MODE parameter and the Network ID Camera is translating it to a text according to the protocol set-up above. In this case the texts are AOP for 0, AEC for 1 and Manual for 2. With reference to this settings, the length should be set to 6 and Comm to MODE. This means that we have to define the length of this COMM field to six characters maximum. Select Comm MODE will link the Mode data to this field.

```
Fielddefinition
Type:  COMM        Length: 6
Row:    56         Column: 108

Comm: MODE          Font: Small

             Previous     Next         Save
```

The field data do not include the unit (kV, mAs etc.). To add that, an F-text field with the appropriate text has to be inserted after the COMM field. Create a new field and under fielddefinition select Type F-text. Enter values for the row and column to place this field at a position of your preference. Hint, use the Place function to position fields, see chapter 3.4.2 'Picture Standard, C1/Min-R2, C1N'. Enter appropriate text under Fixed text.

```
Fielddefinition
Type:  F-text
Row:    56          Column: 84

Fixed text:         Font: Small
Mode
                 Previous     Next        Save
```

These fielddefinitions will give us the text "Mode" followed by the "MODE"-value at the center bottom of the patient data window.

3.6.2.3 Protocol set-up GXDP

Select GXDP-P or GXDP-NP protocol depending on whether the polling function is to be used or not, refer to the Network Installation Manual.

No further set-up is made for this protocol. The data input has the format: "comm field number: value" there the *comm field number* is corresponding to the comm field number defined in the picture and the *value* is the value which shall be displayed in the picture.

The manufacturer of the XRAY equipment should present a documentation specifying which data is representing by which number and maximum length of each item. Example:

Number	Length	Description
0	2	KV
1	4	MAs
2	2	Anode (Rh/Mo)

This means that the following data string is sent from the XRAY-unit:

```
"0:14;1: 2.4;2:Mo".
```

The value "14" will be placed in communication field number zero, the value "2.4" in field number one, text "Mo" in field number two.

Creating the picture that will be printed on the film is done in the same way as usual selecting the COMM field type. **NOTE!** The communication protocol has to be set before setting up the picture, otherwise the COMM field will display NONE. Now, select which data (i.e. number) this COMM field should display. One COMM field for each exposure data must be created.

Example

We want to create a COMM field that shall display the "mAs". Create a new field and under fielddefinition select Type COMM. With reference to the table above the length should be set to 4 and Comm to 1.

```
Fielddefinition
Type:  COMM         Length: 4
Row:    56          Column: 108

Comm: 1             Font: Small

                 Previous     Next        Save
```

The field data do not include the unit (kV, mAs etc.). To add that, an F-text field with the appropriate text has to be inserted after the COMM field. Create a new field and under fielddefinition select Type F-text. The F-text should be on the same row as the COMM field and it should start at column 132 (The COMM field starts at column 108 and has a length of 4 character, a small font character is 6 pixels wide, this gives us that the start position of the F-text field should be 108 + 4 x 6). Hint, use the Place function to position fields, see chapter 3.4.2 'Picture Standard, C1/Min-R2, C1N'.

An appropriate text is entered under Fixed text, in this example "mAs".

```
Fielddefinition
Type:   F-text
Row:    56          Column: 132

Fixed text:           Font: Small
mAs
          Previous     Next        Save
```

These fielddefinitions will give us the "mAs"-value followed by its unit at the center bottom of the patient data window.

3.6.2.4 Protocol set-up SIEMENS Mammomat® 300

```
Define text for Mammomat 300
Small focus: SF
Large focus: LF




                                      Save
```

This window is used to define the focus text string. The Mammomat® 300 sends this parameter as 0 and 1, whereas it should be presented as text instead. This window is used to define this text. For more detailed information, please refer to the Mammomat® 300 manual.

The string may be up to 8 characters long. Use the up and down arrows to go to the row below or above and enter appropriate text.

Creating the picture that will be printed on the film is done in the same way as usual selecting the COMM field type. **NOTE!** SIEMENS Mammomat 300 is sending also the type together with the value

3.6.2.5 Protocol set-up PLANMED

No set-up is made for this protocol. The data input has the correct format which means that no translations are needed.

Creating the picture that will be printed on the film is done in the same way as usual selecting the COMM field type. **NOTE!** The communication protocol has to be set before setting up the picture, otherwise the COMM field will display NONE. Now, select which data (i.e. number) this COMM field should display. One COMM field for each exposure data must be created.

Example

We want to create a COMM field that shall display the kV. Create a new field and under fielddefinition select Type COMM. According to the Planmed protocol the length

of the kV value is two. This means that we have to define the length of this COMM field to two. Select Comm kV will link the kV data to this field.

```
Fielddefinition
Type:   COMM        Length: 2
Row:    56          Column: 108

Comm: kV                    Font: Small

        Previous      Next        Save
```

The field data do not include the unit (kV, mAs etc.). To add that, an F-text field with the appropriate text has to be inserted after the COMM field. Create a new field and under fielddefinition select Type F-text. The F-text should be on the same row as the COMM field and it should start at column 120 (The COMM field starts at column 108 and has a length of 4 character, a small font character is 6 pixels wide, this gives us that the start position of the F-text field should be 108 + 2 x 6). Hint, use the Place function to position fields, see chapter 3.4.2 'Picture Standard, C1/Min-R2, C1N'.

An appropriate text is entered under Fixed text, in this example "kV".

```
Fielddefinition
Type:   F-text
Row:    56          Column: 120

Fixed text:         Font: Small
kV
        Previous      Next        Save
```

These fielddefinitions will give us the "kV"-value followed by its unit at the center bottom of the patient data window.

3.7   Settings

Selecting this item will present a window where some configurations that do not fit within the other items are gathered.

```
Settings
Language            ENGLAND
Country             ENGLAND
Cursor              LINE FLASHING
Erase bookinglist at power interrupt Yes
Exposuredata      Optional
        Previous      Next        Save
```

Use the up and down arrows to move the cursor between the settings, and use Previous and Next soft-keys to select option.

Language   Selects the language the Network ID Camera will speak. Available are; England, Iceland, Germany, France, Spain, Portugal, Holland, Italy, Sweden, Denmark, Norway and Finland. Factory default is 'ENGLAND'.

Country   will select country-depending settings like date format, PID number format. Available are; England, Iceland, Germany, France, Spain,

Portugal, Holland, Italy, Schweiz, Belgium, USA, Canada, Sweden, Denmark, Norway and Finland. Factory default is 'ENGLAND'.

The country and language settings are separated because there are countries where more than one language is common, but where the date format and PID number are the same. Canada and Switzerland are two examples.

`Cursor`   Selects how the cursor should appear on the display. The cursor can be selected as steady or flashing, line or block. Place the cursor at "LINE" position to select line or block and place it at "FLASHING" position to select flashing or steady. Factory default is 'LINE FLASHING'.

`Erase bookinglist at power interrupt`
This setting defines, whether the booking list downloaded from a host computer should be erased or retained when the power is switched off. Note that the setting will be changed by toggling between the words Erase and Retain at the beginning of the sentence. Factory default is 'Yes'.

`Exposure data optional`
This setting defines, whether the film may be exposed when no exposure data has been received from an X-ray unit. The setting will be changed by toggling between the words Optional and Mandatory. Factory default is 'Optional'.

3.8   Remote control

Selecting this item will present a window where the up- and download of a set-up is performed.

```
Remote control


        Connect to : HOST
            Speed: 38400

Connect      Previous     Next         Exit
```

Use the up and down arrows to move the cursor between the settings, and use Previous and Next soft-keys to select option.

`Connect to` Selects which communication port to use, HOST or AUX.

`Speed`   Selects the baudrate for the data transmission, 4800,9600,19200 or 38400.

For a transmission session a PC compatible computer, a pin-to-pin cable with a female 9-pin DSUB on one end and a male 9-pin DSUB on the other end and software for the PC are required. The software, getsetup.exe and putsetup.exe, runs under MS-DOS or in a MS-DOS box in WINDOWS 3.1, WINDOWS 95 or WINDOWS NT. The communication cable should be connected to either HOST or AUX on the camera and the other end either COM1 or COM2 on the PC.

The software kit is available with part number 240000.

3.8.1 Save a Set-up

To save a set-up to a PC the following must be performed:

- Connect a PC to the Network ID Camera.

- Enter "Remote control" and select which communication port and speed to use.

- Press F1 "Connect", a text "Waiting" appear on the display. The camera is now ready for a transmission session.

- Type "getsetup [options] filename" at the DOS-prompt and press ENTER.

    Options are   -p where port is 1 or 2 for COM1 or COM2

    -s where speed is 4800,9600,19200 or 38400.

    Filename is any valid filename where the setup will be saved. It is recommended that the filename ends with ".nsu".

    If the command line is given with no options port COM1 will be used and the speed will be set to 38400.

- When all is done, press F4 to exit remote mode.

3.8.2 Load a Set-up

The setup is saved in such a way it may be saved from one camera using one version of the NIC firmware and later downloaded to another camera with a later version of the firmware.

To load a set-up from a PC the following must be performed:

- Connect a PC to the Network ID Camera.

- Enter "Remote control" and select which communication port and speed to use.

- Press F1 "Connect", a text "Waiting" appear on the display. The camera is now ready for a transmission session.

- Type "putsetup [options] filename" at the DOS-prompt and press ENTER.

    Options are -p where port is 1 or 2 for COM1 or COM2

    -s where speed is 4800,9600,19200 or 38400.

    Filename is the name of an existing file.

    If the command line is given with no options port COM1 will be used and the speed will be set to 38400.

    Before the setup is re-loaded the previous setup will be erased. If download is interrupted for some reason a new download must be performed. If there is problems to download a set-up, even at lower speed, the setup should manually be erased. This since the partially loaded setup may be inconsistent causing the camera to behave incorrectly. To manually erase a set-up (i.e. resetting to factory default), please refer to chapter 3.2.

- When all is done, press F4 to exit remote mode. The camera will ask you to press any key to restart with the new set-up.

4 Upgrading the firmware

The controlling firmware is stored in a FLASH memory. To update this firmware the following equipment are required:

- A PC compatible computer.

- A pin-to-pin cable with a female 9-pin DSUB on one end and a male 9-pin DSUB on the other end.

- Software for the PC is required. The software, FWDL.EXE, runs under MS-DOS or in a MS-DOS box in WINDOWS 3.1, WINDOWS 95 or WINDOWS NT. FWDL.EXE is included in the "Software Kit" which is available with part number 240000.

- Firmware for the Network ID Camera.

4.1 Download the firmware

Before starting the download it can be wise to save the setup to the PC as it may happen that downloading new firmware causes the setup to be erased. How to save a set-up, please refer to chapter 3.7.

Connect the PC to the camera. The communication cable should be connected to either HOST or AUX on the camera and the other end either COM1 or COM2 on the PC.

Prepare the camera for a download session by switching it off, press down the P key and hold it down while switching the camera on again. Now the operator display should look like this:

```
Program load

    Waiting


```

Type "FWDL [option] [filename] at the DOS-prompt and press ENTER.

Option is -1 or -2 corresponding to COM1 and COM2 on the PC. Default is COM1.

Filename is normally "NICver.NFW" where ver is the digit version number. If no filename is given, the filename "TFM.0" will be used.

Ex. To download firmware version 2.1 using COM2. Type "FWDL -2 NIC21x.NFW".

The operator display should now change from "Waiting" to first "Erasing" and then "Loading on COMn" where n is either 1 or 2 depending on whether HOST or AUX is used.

On the screen of the PC there is a progress indicator rotating and a figure showing how far the download has progressed in percent.

When downloading is finished the camera will restart as if the camera was switched off and on again.

The final step is to check if the setup is erased and thus needs to be reloaded.

5   Error Messages

Although all error messages are plain text and self explaining, some guidelines on how to react and handle on these will be appropriate. The error message will disappears when any key is pressed.

The following is a list of all error messages while in set-up mode:

5.1   Illegal value

An erroneous value has been entered. The value of the length and position of a field has an upper limit.

Action: Enter correct value.

5.2   The adjustment may be max 32

The vertical adjustment has a limit of 32 line-pixels.

Action: If there is a need for a greater adjustment than 32 pixel-lines or a negative adjustment (move the image upwards) the whole picture must be moved manually, field by field.

5.3   Out of storage for FTEXT

Maximum numbers of F-texts are 30. These can be distributed between the two windows, C1 and C1N, after one's own preference.

Action: Use F-texts more efficiently. If there is two F-texts on the same line it is possible to merge them. The F-text limit is number of F-text not the total number of F-text characters.

5.4   Length must be between 1 and 8

A Menu-text can be from one up to eight characters long.

Action: Enter correct value. To exit without entering any value, press ESC-key.

5.5   Communication error

An interference of a set-up up-/down-load has occurred.

Action: Select a lower speed and restart the communication session.

5.6   Programming voltage missing (JP8)

Action: Make sure the JP8 jumper is correctly installed. The jumper should be set at 1 - 2 (to the left).

5.7   Failed to erase set-up memory

Action: Make sure the JP8 jumper is correctly installed. The jumper should be set at 1 - 2 (to the left). To exit set-up mode without any changes done, switch the camera off and on again.

5.8   Failed to program set-up memory

Action: Make sure the JP8 jumper is correctly installed. The jumper should be set at 1 - 2 (to the left). To exit set-up mode without saving, switch the camera off and on again.

5.9   Unknown programming error

Action: Restart the camera by switching it off and then on again. Note! Changes made in set-up may not be saved.